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California Water Plan Update 2013
California Department of Water Resources
PO Box 942836, Sacramento, CA 94236-0001

SUBJECT: SANTA BARBAR COUNTY COMMENTS ON THE PUBLIC REVIEW DRAFT OF THE CALIFORNIA WATER PLAN UPDATE 2013

Dear Mr. Massera,

On behalf of the County of Santa Barbara, Dudek is submitting comments on the Public Review Draft of the California Water Plan Update 2013, which are supplemental to those being submitted by Matt Naftaly of the Santa Barbara County Water Agency. Should you have any questions or comments, please feel free to contact me, Jane Gray via email at jgray@dudek.com or by phone at 805.963.0651 ext. 3531 or Matt Naftaly via email at Mnaftal@cosbpw.net or by phone at 805.568.3542.

Our comments are pursuant to Volume 2, regional Reports, specifically, the Central Coast and cover pages 21 to 46 of the Volume.

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Santa Barbara County has a population of over 430,000 with most of the people living in the coastal valleys and in the cities of Santa Barbara and Santa Maria. Other population centers on the south coast include the cities of Goleta and Carpinteria, along with unincorporated areas such as Isla Vista, Hope Ranch, Mission Canyon, Montecito, Toro Canyon, Summerland and the greater Gaviota Coast, including Hollister Ranch. The cities of Solvang and Buellton, the unincorporated communities of Los Olivos, Ballard, and Santa Ynez, and the Chumash Indian Santa Ynez Reservation are located in the Santa Ynez Valley, north of the Santa Ynez Mountains. The City of Lompoc, the unincorporated communities of Vandenberg Village and Mission Hills, Vandenberg Air Force Base, and the Lompoc Federal Correctional Complex are in the Lompoc Valley, where the Santa Ynez River flows out to the ocean. Los Alamos is the only community in the San Antonio watershed. The cities of Santa Maria and Guadalupe, and the unincorporated towns of Orcutt, Casmalia, Betteravia, Garey, and Sisquoc are located in the northern portion of the County. The City of Santa Maria is the largest city in Santa Barbara

County. Northeast of the San Rafael Mountains is the dry and sparsely populated Cuyama Valley, where the community of New Cuyama is located.

The County contains four principal watersheds, including, the Santa Maria Watershed, which includes the Cuyama and Sisquoc watersheds and covers 1,845 square miles; the San Antonio Creek Watershed that covers 165 square miles; the Santa Ynez Watershed that covers 900 square miles; and the South Coast Watersheds, which is comprised of 50 short, steep watersheds extending from the ridge of the Santa Ynez Mountains to the Pacific Ocean that covers 416 square miles. The headwaters of the principal watersheds are generally undeveloped, and the middle and lower sections are often developed with urban uses or are in agricultural use. The four major rivers draining these watersheds are the Santa Maria, Sisquoc, Cuyama, and Santa Ynez. Rainfall is variable, and streamflow is flashy. Streamflow is generated directly from rainfall with little base flow contribution from headwaters. Most rivers and the lower reaches of streams are dry in the summer.

The 1,140-square-mile Santa Maria Watershed is drained by the Santa Maria River which is one of the largest rivers on the central coast of California between Point Lobos and Point Conception and is formed by the confluence of the Cuyama and Sisquoc rivers at Fugler Point, 20 miles inland from the coast. Elevations range from sea level to 6,828 feet at Big Pine Mountain, which is at the headwaters of the Sisquoc River (County of SB Hydrogeomorphic Guidebook, 2002). Much of the watershed is a large alluvial plain that is broad and wide near the ocean that tapers as it moves inland. The plain's boundary is defined by upland/mesa areas, foothills, and mountain complexes. The watershed also contains the Guadalupe-Nipomo dunes complex, which is one of the most extensive coastal dune and dune wetland areas in the United States.

The Santa Maria River, downstream of Highway 1, is free-flowing and unimproved. There is a natural riverbed with riparian habitat, mostly willows; where the river flows through the ubiquitous cultivated agricultural fields, there are earthen agricultural levees. Upstream from Highway 1, the river is improved with earthen and rock levees (constructed by the United States Army Corps of Engineers (USACOE) in the 1950s) to protect the City of Santa Maria and adjacent agriculture from flooding. It is dry for most of the year but does flow intermittently during rainfall events and shortly after rainfall events, as well as during releases from Twitchell Dam. Vegetation in this reach of the river is characterized by willows, mulefat, mock heather, coyote brush and other coastal scrub species on higher terraces. There is little or no vegetation along the reaches with levees or in scour zones. Downstream from Highway 1, there is shallow surface water and greater amounts of riparian vegetation and in some areas, habitat is quite dense. During the dry season, there are flows in the river, but these can be attributed to agricultural and urban runoff, as well as Twitchell Dam releases.

The watershed straddles northwestern Santa Barbara County and southwestern San Luis Obispo County. In addition, a small portion of the northeastern watershed is in Ventura County. The river flow is regulated by Twitchell Dam (constructed in the 1950s by the Bureau of Reclamation), which serves a flood protection and water conservation function. The USACE constructed levees for the Santa Maria River in the 1950's. The USACE levees extend to Fugler Point (near Garey) and terminate at the upstream side of the Highway 1 Bridge in Guadalupe (Santa Maria Estuary Enhancement Plan, 2004). Major tributaries to the Cuyama River are Huasna River and Alamos Creek. Most of the river and its tributaries have intermittent flows, although some reaches of the river have surface water most of the year. Some of the major tributaries also have perennial flows in some reaches. Since 1959, flow in the Cuyama River has been regulated by Twitchell Reservoir, which delays a portion of intercepted storm flow for later release and percolation to the Santa Maria Groundwater Basin. Orcutt Creek drains most of the southwest quadrant of the Santa Maria Valley, an area of approximately 81.5 miles. The stream is actually a tributary of the Santa Maria River, but does not merge with it until it nears the ocean. The only permanent natural lakes are the Dune Lakes complex that includes three ponds with surface areas of 50, 40, and 9 acres. Bradley Lake and a series of small ponds commonly referred to as the Betteravia Lakes are other permanent water bodies. They are formed in part because of natural land depressions, and partly because of dams. In addition, there are numerous other constructed ponds and lakes, the largest of which is the lake formed by Twitchell Dam. The only estuary is at the mouth of the Santa Maria River.

The Sisquoc River, which is designated as a Wild and Scenic River, receives runoff from a watershed area of approximately 470 square miles. The watershed of the Sisquoc River is defined by the northwestward-trending Sierra Madre Mountains on the north and the westward trending San Rafael Mountains on the south. Most of the Sisquoc River drainage lies within the boundaries of the Los Padres National Forest. Except for wilderness areas in the National Forest, all of the land within the watershed is used for some form of agriculture. Other industries of significance include oil and gravel mining, as well as recreation.

Due to concerns raised by residents regarding groundwater overdraft in the Cuyama Valley, a comprehensive report on the current and future water availability of the Cuyama Groundwater Basin was conducted from 2008-2013 by the Water Agency in cooperation with the United States Geological Survey. The study is scheduled for completion and release at the end of 2013 and will include data compilation, new data acquisition, model development, analysis of water availability, and report preparation. Preliminary results from the study indicate areas of the groundwater basin are in significant decline.
Numerous sensitive species in the watershed are listed by the California Department of Fish and Wildlife. Sensitive plant species include the Beach Layia and Spectacle Pod, the Dune Larkspur, the La Graciosa Thistle, the Sand Mesa Manzanita, and the Parish's Checkerbloom. Sensitive mammals include the Giant Kangaroo Rat, the San Joaquin Kit Fox, and American

Badger. Sensitive birds include the American Perigrine Falcon, the Brown Pelican, the Least Bell's Vireo, Willow Flycatcher, California Clapper Rail, and the California Least Tern. Amphibians and reptiles include the Arroyo Toad, the California Red-legged Frog, the California Tiger Salamander, and the California Horned Lizard. The Southern California Steelhead and Tidewater Goby are sensitive fish.

The San Antonio Creek flows westerly from the Solomon Hills through the Los Alamos Valley, the Barka Slough and the San Antonio Valley to the Pacific Ocean, north of Purisima Point. The San Antonio Valley is approximately 30 miles long by 7 miles wide and is nestled between the Solomon-Casmalia Hills to the north, the Purisima Hills to the south, the Burton Mesa to the west and the westernmost flank of the San Rafael Mountains to the east. The San Antonio Valley is approximately 130 miles^2 and the underlying groundwater basin is approximately 110 miles^2.

The drainage system of the San Antonio Creek Watershed starts at a point approximately 10 miles east of Los Alamos. It traverses generally to the west through Los Alamos and Vandenberg Air Force Base to the ocean. The basin is rather narrow, averaging about 8 miles in width. The lower reaches throughout Vandenberg Air Force Base have a perennial flow, in part because of irrigation tail water, but primarily because surfacing of an impermeable geologic unit near Barka Slough, causes upwelling. The chief land uses in the watershed include ranching and agricultural cultivation. Specifically, this includes annual or vegetable crops in the flat areas, wine grapes in the transitional uplands and dry farming, which requires no supplemental irrigation. Crops which are irrigated depend on groundwater resources (CARCD, 2002) (CWA, 2011).

The Santa Ynez River originates in the San Rafael Mountains in the Los Padres National Forest near the eastern border of the County. The watershed itself is bounded by the San Rafael Mountains to the northeast, the Prisima Hills to the north and the Santa Ynez Mountains to the south. A small portion of the Santa Ynez River watershed lies in Ventura County. The river flows westerly about 90 miles to the ocean, passing through Jameson Lake, Gibraltar Reservoir, and Lake Cachuma. The Santa Ynez River basin is the largest drainage system that is wholly located in Santa Barbara County. The 621,577 acres that it drains is about 40 percent of the mainland part of the County. It is the primary source of water for about two-thirds of the Santa Barbara County residents, including those within the watershed as well as the heavily populated south coastal urban areas. Three dams have been constructed on the river to store and divert water to the south coast. None of the reservoirs on the Santa Ynez River has a prescriptive requirement for a flood control storage area although Cachuma Reservoir operations have been modified to provide flood benefit during large storm events. All of the water diversions to the south coast from the dams are by tunnels cut through the Santa Ynez Mountains to terminal reservoirs near urban areas.

Approximately 260,000 acres in the Santa Ynez watershed are public land, 215,000 of which is within the Las Padres National Forest and is relatively pristine. Riparian habitat is well preserved and there has been no channelization nor are there barriers for steelhead/rainbow trout. The remaining public lands are, for the most part, on Vandenberg Air Force Base. Agriculture in the watershed includes truck crops, wine grapes, irrigated forage crops, and livestock. Livestock consists of beef cattle and an extensive thoroughbred racehorse industry. Most of the relatively flat lands between Buellton and Lompoc are used for growing a variety of irrigated crops including flowers, vegetables, wine grapes, beans, and walnuts. Most of the irrigated land is located in Lompoc Valley west of Lompoc. That area is similar to Santa Maria Valley in that the marine influences allow year round crop production. All irrigation water is pumped from underground resources. Almost all of the upland areas are used as range to raise beef cattle. Other important industries are oil production, diatomaceous earth mining, and human resources support for Vandenberg Air Force Base (CARCD, 2002)

High quality habitat also occurs on private land in the lower river and tributaries. Some habitat above complete barriers to steelhead continues to support a naturally reproducing rainbow trout population that still retain ancestral ties to the native steelhead population. This rainbow trout population may be contributing outmigration of individuals to the persistent remnant anadromous steelhead population downstream of Bradbury Dam (Steelhead Migration Barrier Inventory and Recovery Opportunities for the Santa Ynez River, Stoecker Ecological Consulting, 2004). Other portions of the lower river through the urban areas of Solvang and Buellton have been channelized and the aquatic habitat and vegetative habitat have been degraded or removed.

The south coastal region generally includes all of the southerly drainages from Point Concepcion to the Ventura County line. Its approximately 50 watersheds range from 162 acres to 30,572 acres, with an average size of 3,209 acres. This area is heavily influenced by the ocean because of the southerly aspect, and the ocean current which is usually about 10 degrees higher than the current north of Point Concepcion during the winter months. The topography is precipitous, rising abruptly from sea level to over 4,300 feet in places along the crest of the Santa Ynez range. Annual rainfall varies from about 16 inches on the coast to about 30 inches along the crest. Virtually all the subtropical fruit (principally avocados) and about 75 percent of the nursery and hot-house products of the County are raised in the South Coast, most of which are in the vicinity of the urban complex between Goleta and Carpinteria. Irrigation water is provided from a variety of sources, including pumped groundwater; diversions from Cachuma, Gibraltar, and Juncal Dams; and to a lesser degree from on-farm surface entrapments.

The southeastern part is heavily urbanized, and includes the contiguous communities of Goleta, Santa Barbara, Montecito, Summerland, and Carpinteria. The Rincon Creek Watershed is considered part of the South Coast Watershed for purpose of the IRWM Plan 2013 and is comprised of 9,532 acres in the south eastern portion of the County, with a small portion of the watershed extending into Ventura County. The watershed reaches approximately 7.5 miles

northward from the Pacific Ocean. Other than agriculture, important industries include tourism, electronic products manufacturing, city and County government, and higher education, including the University of California, Santa Barbara.

The Goleta Slough Watershed covers approximately 45 square miles and includes seven creeks, Tecolotito, Carneros, Las Vegas, San Jose, Atascadero and Maria Ynacio. The slough drains the Goleta Valley and watershed, and receives the water of all of the major creeks in the Goleta area including the southern face of the Santa Ynez Mountains.

The Slough is an area of estuary, tidal creeks, tidal marsh, and wetlands. The slough primarily consists of the filled and unfilled remnants of the historic inner Goleta Bay about 8 miles west of the City of Santa Barbara. The slough empties into the Pacific Ocean through an intermittently closed mouth at Goleta Beach County Park just east of the UCSB campus and Isla Vista. The Santa Barbara Airport has the largest border on the slough and contains the largest part of the slough. UCSB, Isla Vista, the City of Goleta and other unincorporated areas of the county, including the landward bluffs of More Mesa, surround and encompass the rest of the slough.

The slough is one on the few coastal wetlands that remain in the State and the slough is important for enhancing water quality, by filtering pollutants; providing recreational opportunities including bike paths, parks and bird watching along many of Goleta creeks; and protecting wildlife habitat for endangered steelhead trout, red-legged frogs and tidewater gobies. (State of California's Critical Coastal Areas. 2006).

Four of the other larger watersheds on the South Coast are discussed below and information has been extracted from the South Coast Watershed Characterization Study, prepared by URS.

The Arroyo Burro Creek begins in the Santa Ynez Mountains and flows south until it empties into Arroyo Burro Beach (Hendry's Beach). The watershed encompasses about 6,217 acres. It extends about seven miles from the ocean to the ridge of the Santa Ynez Mountains at 3800 feet elevation. Tributaries to Arroyo Burro Creek consist of Las Positas Creek, Barger Creek, San Roque Creek, and Lauro Canyon Creek. A small lagoon is present at the end of the creek at Arroyo Burro Beach. The lagoon has regular tidal influence.The lower reach of the watershed extends from Cliff Drive to Highway 101. In this reach, the creek traverses medium density residential development interspersed with native and non-native bank vegetation. The urban reach of the creek begins from the point where the channel becomes lined at the crossing of Highway 101 until it splits into San Roque and Barger Canyon creeks near the La Cumbre Shopping Center. The predominant land use is open space of the National Forest, comprising 48 percent of the entire watershed. Residential and commercial development combined account for about 31 percent of the watershed. Agriculture accounts for only eight percent of the total watershed.

There are two main tributaries that make up the upper reaches of the Arroyo Burro watershed. San Roque Creek makes up 48 percent of the watershed with its headwaters beginning above Lauro Canyon Reservoir. In its upper reaches, the creek runs from a low density residential area to the lower stretches where it passes through an increasingly dense urban area. Overall, the creek can be characterized by moderately vegetated banks, cobble and sand substrate, with trash throughout the lower reaches. The next main tributary, Barger Creek, which makes up 14 percent of the watershed begins in Barger Canyon above Foothill Road and passes through a medium density residential area before entering Arroyo Burro Creek. The creek is mostly dry, with some flow noted approximately 1,100 feet upstream of the confluence with the mainstem.

Arroyo Burro also has two smaller tributaries - Lauro and Las Positas creeks. Lauro Creek is a small creek that flows into Lauro Reservoir. The creek runs through a low density residential area. The bank vegetation is primarily dense native vegetation with substrate that is composed of cobbles, gravel and silt. Las Positas creek is located on the middle reach of the main stem between Las Positas Road and a low density residential area. The headwaters are located near Modoc Road and Highway 101. Flow is typically minimal throughout this creek.

Mission Creek begins in the Santa Ynez Mountains above the Santa Barbara Botanical Gardens in Rattlesnake Canyon and winds its way down through the City of Santa Barbara until it reaches the ocean east of Stearns Wharf. The watershed encompasses about 7,786 acres. It extends approximately 7.5 miles from the ocean to the ridge of the Santa Ynez Mountains at 3,985 feet elevation. There are two main tributaries, Rattlesnake Creek and Old Mission Creek. There is also a small tributary called Las Canoas Creek branching out from Rattlesnake Creek. The entire watershed encompasses a mixture of residential, urban and natural environments.

A lagoon is present at the creek mouth. Mission Creek lagoon extends from just east of Stearns Wharf to Yanonali Street, approximately 2,100 feet upstream from the bottom of the lagoon. The size of the lagoon is dependent on season, rainfall and tidal influx. A sand berm often forms preventing the mixing of creek and ocean water. Directly upstream of the lagoon the creek banks are stabilized by concrete walls or gabions. The amount of flow along this reach varies greatly depending on tidal conditions.

Moving further upstream, the middle reach of the creek has year-round flow and well-vegetated banks. This reach of the creek is characterized by urban development, which includes enormous amounts of trash, discarded blankets and clothing etc. At approximately 6,400 feet upstream of the ocean near Carrillo Street, the creek substrate changes from rocks, cobbles, sand and silt to a concrete lined channel.

The upper reach of the watershed begins upstream of State Street. The land use at this point changes into low density residential. The surroundings are less urbanized and the creek assumes a more natural state. The substrate returns to cobbles, sand and silt, the vegetation density increases greatly and the turbidity is clear. The confluence of Rattlesnake Creek is also

located in this stretch. Above the Botanical Garden, there are only scattered estates. Over the entire watershed, the open space of the National Forest comprises about 47 percent of the watershed, while residential and commercial land uses contribute about 31 and 17 percent, respectively. Agriculture accounts for only two percent of the total watershed. The confluence of Rattlesnake Creek occurs just below the Botanical Gardens in the Mission Canyon area. The creek flows through low density residential and undeveloped areas. There are several horse corrals that encroach on the creek. Las Canoas Creek is a small tributary that joins lower Rattlesnake Creek. Rattlesnake Creek makes up 27 percent of the entire watershed.

The Carpinteria Creek watershed is located in the southeastern portion of Santa Barbara County. The watershed encompasses 9,410 acres. It extends about seven miles from the ocean to the ridge of the Santa Ynez Mountains at 4568 feet elevation. Most of the watershed encompasses agricultural lands with scattered residences. A lagoon is present at the creek mouth Carpinteria lagoon begins 50 feet above the ocean and extends 650 feet to the railroad tracks. The lagoon is located in Carpinteria State Beach Park. The size of the lagoon is dependent on season, rainfall and tidal influx. The lagoon narrows 50 feet above the ocean and creates a stream of constant outflow into the ocean. A sand berm usually occurs, depending on tidal conditions, which prevents a constant ocean inflow to the lagoon.

Most of the lower and middle sections of the watershed are dominated by residential and commercial development, particularly downstream of Highway 101. The upper watershed is comprised of greenhouses, orchards, scattered residences, and the open space of the National Forest. The latter comprises about 79 percent of the entire watershed. Agricultural uses encompass about 17 percent, while the combined residential and commercial uses account for less than 2 percent of the entire watershed.

The upper portion of the watershed includes one tributary - Gobernador Creek. This portion of the watershed including the tributary consists mainly of avocado and citrus orchards with a few scattered residences.

The Rincon Creek watershed occurs within both Santa Barbara and Ventura counties. The watershed encompasses 10,219 acres. It extends about 7.5 miles from the ocean to the ridge of the Santa Ynez Mountains at 4,800 feet elevation. Long Canyon and Casitas Creek are the two main tributaries to the mainstem of the watershed. Land use in the watershed is predominantly agriculture with scattered residences. The watershed is generally undisturbed and its riparian corridors are mostly intact and dominated by native vegetation.

A small lagoon is present at the creek mouth. It is surrounded by a small gated residential community. The size of the lagoon varies according to season, rainfall and tidal influx. The lagoon narrows 100 feet upstream of the ocean where constant outflow into the ocean occurs. The upper portion of the lagoon is diverted into a culvert under Highway 101, a small private

road, and the Rincon Beach parking lot. At the end of the culvert, the creek assumes its natural state, characterized by high banks and mostly native vegetation.

The upper region of the watershed is predominantly agricultural with adjacent estates and residences

In addition, there are some horse corrals nearing the creek corridor in this area. The open space of the National Forest comprise about 64.5 percent of the watershed. Agricultural lands are the next dominant land use type, covering about 32 percent of the watershed. Residential land uses only account for less than two percent, while commercial development is absent. Overall, the creek maintains its natural state with exception to the lower reaches of the watershed.

There are two tributaries to Rincon Creek - Long Canyon and Casitas Creek. The confluence of Long Canyon is located in the middle reach of mainstem. The confluence of Casitas Creek with the mainstem is located at the upper end of the watershed. There are avocado orchards scattered throughout both tributaries. In addition, there are many springs discharging into the creek throughout the watershed

The listed species found in Santa Barbara County include five aquatic/stream dependent species (tidewater goby [*Eucycloglobius newberryi*], tiger salamander [*Ambystoma californiense*], red-legged frog [*Rana aurora draytonii*], arroyo toad [*Bufo californicus*], and southern California steelhead trout [*Oncorhynchus mykiss*]). The County's watersheds provide critical habitat for the anadromous steelhead trout, which are found primarily in the Santa Ynez River and its tributaries and the South Coast creeks, including Mission Creek. Steelhead populations have declined due to human activity impacts, such as loss of native vegetation, influx of aggressive exotic species, increased creek/stream scouring, streamflow and groundwater diversion, increases in impervious surfaces and runoff, and degraded water quality because of thermal pollution and potential nutrient, sediment, and other polluted runoff from urban development. Dams, culverts, concrete channels, low-flow crossings, or other structures have created fish passage barriers to important upstream habitat. The southwestern pond turtle (*Clemmys marmorata pallida*), a California Species of Special Concern, also is found in the County.

Zaca Lake, located in the San Rafael Mountains north of Lake Cachuma, is the only natural lake in Santa Barbara County. It is less than 1 mile in circumference and tends to become anaerobic seasonally; therefore, the waters do not support a large or diversified biota.

Lake Los Carneros is located on the grounds of Stow House in Goleta and is not a natural body of water; it does, however, support a large and stable ecological community. It is surrounded by typical aquatic vegetation and supports diverse bird species.

Lake Cachuma is the largest reservoir in the County. It attracts numerous migratory birds and has a rookery of great blue herons. The endangered southern bald eagle (*Haliaeetus*

leucocephalus) may be observed at the lake. The lake supports large populations of largemouth and smallmouth bass, crappie, bluegill, redear, sunfish, channel catfish, and rainbow trout.

The County's four major rivers (Santa Ynez, Santa Maria, Cuyama, and Sisquoc shown in Figure 3-1 and its many creeks and streams are characterized by riparian vegetation along their banks. This habitat can also occur along arroyos, barrancas, and other types of drainages throughout the County. Riparian vegetation supports a great diversity of aquatic and terrestrial wildlife species. Streams and pools provide habitat for aquatic and semiaquatic species such as Pacific chorus frog, western toad, Pacific tree frog, and the introduced bullfrog. Common reptiles include the ensatina, western fence lizard, common king snake, gopher snake, and common garter snake. Riparian vegetation is also used by small mammals for cover, movement corridors, and foraging. Small populations of the southwestern willow flycatcher (*Empidonax trailii extimus*), least Bell's vireo (*Vireo bellii pusillus*), federally and state-listed species, are present in the riparian areas along the Santa Ynez River, portions of which are designated as critical habitat for these species.

A number of invasive weeds are present in the County's riparian areas, including arundo, tamarisk, Pampas grass, myoporum, cape ivy, and castor bean. Such weeds are detrimental to habitat and water conservation, and they increase the risk of flooding and erosion in riparian systems. South Coast creeks discharge to the Santa Barbara Channel and impaired creek water quality affects the water quality of the ocean in the vicinity of public beaches. Common to all urban south coastal watersheds, the natural function of local creeks has been affected over time by human activities and land alteration, which ultimately has altered natural hydrologic and geomorphologic processes, degraded water quality, and diminished native biological communities.

Several salt marshes occur in the County and provide habitat for a number of estuarine invertebrates and fish, migratory birds, and rare and endangered animal species, such as Belding's Savannah sparrow (*Passerculus sanwichensis beldingi*), California brown pelican (*Pelicanus occidentalis californicus*), western snowy plover (*Charadrius alexandrinas*), light-footed clapper rail (*Rallus longirostris levipes*), and tidewater goby; and plant species such as salt marsh bird's beak (*Cordylanthus maritimus*).

Carpinteria Salt Marsh is a 230-acre estuary adjacent to the City of Carpinteria and is owned by the City of Carpinteria, the University of California (as part of its Natural Reserve System), and the Land Trust for Santa Barbara County. The marsh includes intertidal estuarine wetlands, adjacent palustrine wetlands, and some subtidal deep water habitat in natural and artificial channels (Carpinteria Salt Marsh Reserve) (http://nrs.ucop.edu/reserves/carpinteria/carpinteria.htm).

The reserve offers habitat for migratory waterfowl as well as endangered plants and animals like the salt marsh bird's-beak, light-footed clapper rail, and Belding's savannah sparrow. The marsh was one of the original California Critical Coastal Areas identified in 1995 as an impaired estuary. It is also a 303(d) listed water body (for nutrients, organic enrichment, low dissolved oxygen, and priority organics). Nurseries, greenhouses, orchards, row crops, and residential areas may contribute to nutrients in the watershed. Sedimentation is likely coming from

construction, storm drains, and agriculture. The marsh and its tributaries (Santa Monica Creek, Franklin Creek, and Arroyo Paredon) contain levels of nitrates that exceed Basin Plan objectives for municipal and domestic supply. Flood control, sediment management, and ecosystem enhancement measures recently have been implemented.

Goleta Slough is located near UCSB and includes portions of the Santa Barbara Airport, which is under the jurisdiction of the City of Santa Barbara (Santa Barbara ChannelKeeper, 2013). In the Slough, fresh water from seven streams mixes with salt water from the ocean, creating a range of habitats that support a unique assemblage of species, including some that are Regionally rare in coastal California, or locally rare in Santa Barbara County. Endangered species are known to occur in the vicinity, including the California least tern, California brown pelican, Light-footed Clapper Rail, Belding's Savannah sparrow, American peregrine falcon, California Red-legged frog, Southern California steelhead trout and Tidewater goby. The Slough has been designated as a Globally Important Bird Area - 279 bird species have been reported there. The Slough is also designated as Environmentally Sensitive Habitat in Santa Barbara City and County Local Coastal Plans, and much of it is a State Ecological Reserve.

Large volumes of sediment and debris contained in runoff from the mountains have entered the Goleta Slough ecosystem and profoundly affected the ecosystem by raising ground surface elevations and affecting patterns of flooding and the development of wetland versus upland habitats. High inputs of sediment and debris, funneled into relatively narrow areas as a result of creek channelization and development of the Goleta Valley, have diminished the capacity of creek channels to convey floodwaters through developed areas, which require regular maintenance by the Santa Barbara County Flood Control District. Goleta Slough is a 303(d) impaired water body for pathogens, and priority organics and is considered a Critical Coastal Area (CCA). The slough is managed by the Santa Barbara Airport and the Goleta Slough Management Committee, which is composed of a variety of federal, state, and local agencies, organizations, and individuals, through the Goleta Slough Ecosystem Management Plan. The importance of the slough is recognized and reflected in its designation as an Environmentally Sensitive Habitat in the Local Coastal Plans of both the City and County of Santa Barbara.

The Greater Devereux Slough ecosystem is located on the West Campus of UCSB, and a large portion of the area is a designated Environmentally Sensitive Habitat. The Devereux Slough ecosystem is critical to the health of the coastline and the watershed and supports a large abundance and diversity of species including several endangered birds, fish, and plants. Fish that live in the slough include the Tidewater Goby, California Killifish, Mosquitofish, and Topsmelt. Invertebrates also inhabit this slough including microscopic crustaceans, worms, and insect larvae like Dragonfly nymphs. Over 290 species of birds are found in the Devereux Slough ecosytem. They include Great and Snowy Egrets, Great Blue Herons, Black-crowned Night Herons, Avocet, Northern Shovelers, Ruddy Ducks, and Least Sand pipers.

The upland drainage areas of the Devereaux Slough system, commonly referred to as Santa Barbara Shores and Ellwood, are important because they are home to one of the largest monarch butterfly overwintering sites on the West Coast. As a part of the University of California's Natural Reserve System, the area is reserved for habitat and wildlife preservation, public education, and academic research. The slough is not listed on the 303(d) list, but

sediment loading is reducing the total size of the slough. Continued residential development in the watershed may increase contamination of runoff entering the slough, and exotic plant species are displacing native plants and altering the habitats. The Santa Barbara Audubon Society began a new habitat restoration project on the north shore of Devereux Slough in September 2002 intended to restore a 1.42-acre portion of Devereux Slough seasonal wetland and upland margin, improve foraging habitat for the state-listed Belding's Savannah sparrow and two species of marsh-dependent butterflies, pygmy blue and wandering skipper. In April 2013, UCSB, through the Trust for Public Land acquired a 64-acre former golf course in the upper Devereux Slough for restoration to coastal wetlands and on-going protection.

The Surf area, including Ocean Beach Park, is located about 13 miles west of Lompoc at the mouth of the Santa Ynez River. The area contains a salt marsh, a small freshwater marsh, and dune habitat. Access to certain parts of the beach is restricted at times because the western snowy plover nests there. Like the other marshes, this area is a stopover for birds using the Pacific Flyway, and it contains habitat suitable for a number of sensitive species, including Belding's Savannah sparrow and the black rail. Endangered plant species, such as salt marsh bird's beak also may be found here. The Santa Ynez River Lagoon also is found here and generally forms when flows decrease after the winter runoff period when the mouth of the river fills with sand deposited by both the river and by the strong longitudinal drift of sand from north to south along the shoreline. Low summer flows generally are unable to keep the outlet open, although inflow from the Lompoc treatment facility and wave action can breach this barrier (COMB and USBR, 2004). The lagoon represents a unique habitat characterized by saltwater/freshwater mixing.

This community occurs in several places along the coast, including on the southwestern edge of the University of California, Santa Barbara, campus (Devereux Dunes), at Vandenberg Air Force Base, north of Point Sal, between Point Sal and Purisima Point, south of Purisima point, and around Surf/Ocean Beach Park. Of particular note is the Guadalupe-Nipomo Dunes Complex, located near the mouth of the Santa Maria River. The Guadalupe-Nipomo Dunes Complex is a National Natural Landmark comprising 18 miles and more than 22,000 acres of one of the largest coastal dune ecosystems on earth. The Dunes Complex is located in a transition zone between Northern and Southern California plant and animal communities, resulting in a high degree of habitat diversity, a large number native plants and animals, and susceptibility to disturbing delicate ecosystem balances. With more than 1,000 known species of birds, plants and animals and some of the highest dunes on the West Coast, it is a place of rare beauty and significance. Established in 2000 and encompassing 2,533 acres, the Guadalupe-Nipomo National Wildlife Refuge is located in the heart of the Dune Complex. The habitat includes coastal dune scrub, dune swales, wetlands, fore and active dune areas and coastal strand. Sensitive species found in the refuge include the western snowy plover, California red-legged frog, California least tern and over 16 species of rare plants. The Oso Flaco Lake Natural Area, a California State Park, also is located within the Dune Complex.

The SWRCB designates Areas of Special Biological Significance (ASBS) throughout the State of California, defined as "a non-terrestrial marine or estuarine area designated to protect marine species or biological communities from an undesirable alteration in natural water quality,

including, but not limited to, areas of special biological significance that have been designated by the SWRCB through its water quality control planning process (PRC Section 36700[f]). In these areas, non-point source pollution is to be controlled as much as possible, and point source and thermal discharges are generally not permitted. The only ASBS within Santa Barbara County is the Channel Islands National Marine Sanctuary, which is managed by the National Park Service out to 6 miles from shore. This IRWM Plan does not include the Santa Barbara Channel Islands thus no ABS is located within the IRWM Planning area.

California Assembly Bill (AB 993) the Marine Life Protection Act was passed into law on October 10, 1999. A ‘‘marine protected area’’ is a named, discrete geographic marine or estuarine area seaward of the high tide line or the mouth of a coastal river, including any area of intertidal or sub-tidal terrain, together with its overlying water and associated flora and fauna that has been designated by law, administrative action, or voter initiative to protect or conserve marine life and habitat. Marine protected areas include marine life reserves and other areas that allow for specified commercial and recreational activities, including fishing for certain species but not others, fishing with certain practices but not others, and kelp harvesting, provided that these activities are consistent with the objectives of the area and the goals and guidelines of the law. Marine protected areas are primarily intended to protect or conserve marine life and habitat, and are therefore a subset of marine managed areas, which are broader groups of named, discrete geographic areas along the coast that protect, conserve, or otherwise manage a variety of resources and uses, including living marine resources, cultural and historical resources, and recreational opportunities. A number of marine protected areas are present within Santa Barbara County, including:

- The Channel Islands
- Goleta Slough
- Refugio State Marine Conservation Area
- Vandenberg State Marine Reserve
- A 22-square mile no-take marine reserve at Pt. Conception
- A 2-square mile marine conservation area at Kashtayit (near Gaviota State Park) that allows only recreational take of finfish and invertebrates (except for rock scallops and mussels) and the harvest of giant kelp by hand
- A 2.5-square mile marine conservation area at Naples Reef (off the Gaviota Coast) that allows only spear-fishing of pelagic finfish and white sea bass and the harvest of giant kelp
- A 10.5-square mile marine conservation area at Campus Point in Goleta that allows only ongoing maintenance and monitoring of oil infrastructure in the area, and
- A 0.25-square mile marine conservation area at Goleta Slough that allows only necessary dredging, habitat restoration and other ongoing maintenance work.

2 **Page 25 – Santa Barbara County IRWM**

The Santa Barbara County IRWM Region (Region) includes an estimated population of 427,358 residents as of January 1, 2012. The Region spans, 2,745 square miles and includes eight incorporated cities including Carpinteria, Santa Barbara, Goleta, Lompoc, Buellton, Solvang, Guadalupe and Santa Maria. Combined, these cities occupy approximately 70 square miles. In addition to the incorporated areas, the Santa Barbara Region has 21 different and distinct unincorporated communities and tremendous geographical diversity. The Region has five major watersheds and boasts 100 miles of coastline. Elevations range from sea level to the highest peak of Big Pine Mountain at 6,828 feet and there are 215,000 acres of National Forest. The Region utilizes the County jurisdictional boundary to define the regional boundaries. The governance structure of the IRWM Region was established in 2006 with an MOU and includes the Cooperating Partners, which is the regional water management group, the Steering Committee, which is a sub-set of the Cooperating Partners, and the Project Manager. Stakeholder outreach and participation has been the hallmark of the regional IRWM planning effort for over eight years.

3 **Page 25 – Groundwater**

The groundwater basins in the County have been divided into north County, Santa Ynez River and south coast basins and are listed below in Table 3.2. The north County groundwater basins include Santa Maria, San Antonio Creek, and Cuyama. The Santa Ynez groundwater basins include Santa Ynez Uplands, Buellton Uplands, Lompoc, and Santa Ynez River Riparian Basin. The south coast groundwater basins (located between the Santa Ynez Mountains and the Pacific Ocean) include Carpinteria, Montecito, Santa Barbara, Foothill, Goleta North/Central, Goleta West, More Ranch, Ellwood to Gaviota Coastal Basins, and Gaviota to Point Conception Coastal Basins.

The following conclusions regarding groundwater basins are taken from the Santa Barbara County Groundwater Report (2011) (http://www.countyofsb.org/pwd/pwwater.aspx?id=41398&terms=groundwater%20report). References to overdraft pertain to safe yield and not perennial yield. Safe yield is defined as the maximum amount of water which can be withdrawn from a basin (or aquifer) on an average annual basis without inducing a long-term progressive drop in water level. Perennial yield is defined as the amount of water that can be withdrawn from a basin (or aquifer) on an average annual basis without inducing economic or water quality consequences

The information and conclusions contained in the Santa Barbara County Groundwater Report (2011) reflect data developed by the Water Agency and data contained in documents and reports listed under References on page 95 at the back of the report (see). In the report, the Water Agency stated that other individuals/agencies might reach different conclusions based on different sources of data or interpretations, as the report drew on the best available information, in some cases referencing conclusions from studies conducted over a decade ago. It was acknowledged that basin conditions could change along with changes to water supply, land use, and other factors. Information from more recent studies was included where

applicable and sources of new information were noted in the text." The most recent Santa Barbara County Groundwater Report summarizes the status of groundwater basins as follows:

- An in-depth groundwater basin study now being conducted by the Santa Barbara County Water Agency in conjunction with the USGS confirms that part of the Cuyama Groundwater Basin is in a state of significant overdraft and some water quality impairments are of concern (http://ca.water.usgs.gov/projects/cuyama/). It is unclear at this time how this will affect the future economic viability of the Region and its economy.
- In the recent litigation, Santa Maria Valley Water Conservation District versus the City of Santa Maria et al., the court ruled that, based on a preponderance of evidence, the Santa Maria Groundwater Basin is not currently in a state of overdraft. Management of this groundwater basin is subject to the terms of the adjudication and ongoing supervision of the Court.
- Past studies of the San Antonio Groundwater Basin have shown that the basin is in a state of overdraft of approximately 9,500 AFY. Water levels have fallen significantly, but no regional economic or groundwater quality problem has been documented.
- The Lompoc Plain Groundwater Basin is in equilibrium under the SWRCB Decision WR 89-18 because natural recharge is augmented with periodic water releases from Cachuma Reservoir to maintain groundwater levels in the basin. The basin is managed by the Santa Ynez River Water Conservation District.
- The Lompoc Uplands Groundwater Basin has apparently reached equilibrium since, over time, water levels have been lowered to approach the elevation of the Lompoc Plain and Santa Ynez River, which now contribute underflow to the Uplands Basin.
- The Santa Rita subarea of the Lompoc Basin is in a state of overdraft of approximately 800 AFY based on a 2001 study. However, water levels in some parts of this area have declined significantly in the past few years, and thus, in the future some economic effects may occur if pumping lifts and costs increase.
- The Buellton Uplands Basin is in a state of surplus of approximately 800 AFY based on a 1995 study and generally stable water level measurements.
- The condition of the Santa Ynez Uplands Groundwater Basin has varied over time, and a 2001 study reported the basin as being in a state of overdraft of approximately 2,028 AFY at that time. The decline in water levels in this basin appears to have bottomed out in the 1987 to 1991 drought, however, and the basin currently appears be in equilibrium. Under current extraction practices, part of the basin is managed conjunctively with local and imported surface water supplies. No regional economic or water quality impacts associated with pumping have materialized.
- The south coast basins are in equilibrium through management by local water districts and the Wright Suit Settlement1. The City of Santa Barbara practices conjunctive use of groundwater resources in the Foothill Basin and Storage Unit No. 1 of the Santa Barbara

Groundwater Basin. Relatively minor amounts of pumping occur during average and wet years. More pumping occurs during droughts to replace supplies of diminished surface water. Due to management of pumping by south coast public water purveyors and various private pumpers, the basins are in long term balance.

4

Page 27 – Water Uses, Drinking Water

In Santa Barbara County, the larger urban areas, including the cities of Santa Barbara, Santa Maria and Lompoc provide municipal water services. Medium size cities that provide municipal water service include the cities of Solvang and Buellton. Other urban areas including the cities of Carpinteria and Goleta as well as the unincorporated areas such as Montecito and Summerland are supplied purveyed through water districts. Smaller still, the communities of New Cuyama, Casmalia, Los Alamos and Mission Hills are served by community services districts. There are also many other small to very small community services districts and small water companies that provide drinking water to people.

Lake Cachuma is owned and operated by the federal government. Lake Cachuma was completed in 1956 with a storage capacity of about 205,000 AF, but its capacity has been reduced to about 190,000 acre-feet due to the accumulation of silt in the reservoir. The principal features of the Cachuma Project are Bradbury Dam, Lake Cachuma, Tecolote Tunnel and the South Coast Conduit distribution systems. Included in the main conduit system are four regulating reservoirs and Sheffield Tunnel. The South Coast Conduit is constricted between Tecolote Tunnel and Cater Treatment Plant due to decreased pipeline capacity since other facilities were added to that reach of the conduit. Additionally, the aging conduit now requires significant levels of maintenance, which could require that sections of the South Coast Conduit be taken out of service for days or weeks at a time and affect the reliability of water supply.

Twitchell Reservoir is owned by the federal government and operated by the Santa Maria Water Conservation District. Gibraltar Reservoir is owned and operated by the City of Santa Barbara. Jameson Lake is owned and operated by the Montecito Water District. Lake Cachuma (pictured below), Gibraltar Reservoir, and Jameson Lake are all located in the Santa Ynez River Watershed. The three reservoirs on the Santa Ynez River supply most of the water used in the south coast area of Santa Barbara County. Twitchell Reservoir provides water for groundwater recharge and impoundment for flood control. As discussed below, Twitchell, Jameson, and Gibraltar reservoirs, and to a lesser extent Lake Cachuma, are being filled with sediment, reducing their storage capacity and making it increasingly important to enhance local water supply reliability through conservation and other methods. Twitchell Dam construction began in July 1956 and was completed in October 1958. The reservoir and Dam were designed to provide the Santa Maria Valley with flood protection and water conservation. The Dam catches excess rain runoff from the Cuyama watershed (1,600 mi2) and stores it in the reservoir, protecting the valley from winter flooding. Water is slowly released from the reservoir into the Cuyama River, which flows into the Santa Maria River, which bisects the Santa Maria Groundwater Basin. The Santa Maria River serves as the main recharge source for the local aquifer and primary water supply. The aquifer provides water for the entire Santa Maria Valley, including the City of Santa Maria, Guadalupe, unincorporated area of Santa Barbara County, and the surrounding agricultural community in northern Santa Barbara and southern San Luis

Obispo County. The Twitchell Reservoir produces a 32,000 acre-feet per year of water for recharge into the Santa Maria Groundwater Basin.

Since its completion, Twitchell Reservoir has been trapping sediments from the 1,140 square mile Cuyama River watershed. Original studies estimated that 40,000 AF of sediment would accumulate in the reservoir during the first 100 years of operation (Twitchell Management Authority, 2010). In 1981, a study found that the rate of sedimentation was about 70 percent greater than the original estimate. As of 2012, the accumulated sediment had reached an estimated 45,124 AF. The reservoir capacity is approximately 194,971 AF (Santa Barbara County Water Agency, 2012). Because of this, the Santa Maria Valley Water Conservation District has prepared a Twitchell Project Manual that helps to ensure the continued safe operation of the reservoir's water release works and also extend the usable life of the reservoir.

Gibraltar Reservoir was completed in 1920 with a storage capacity of 14,000 AF. Water from the reservoir is transported through the Mission Tunnel to the south coast. Although the dam was raised 23 feet in 1948, the current storage capacity of the reservoir has been reduced to 5,303 acre-feet (AF); with an annual yield of 4,600 AF per year (Central Coast Water Authority, 2010 UWMP, page 38). The reservoir is the source of about one-third of the City of Santa Barbara's water supply. Loss of storage capacity is mitigated by the pass-through provision of the Upper Santa Ynez River Operations Agreement which allows the City of Santa Barbara to pass-through Gibralter's yield and deliver it through Cachuma Reservoir.

Jameson Lake was dedicated in 1930 with a storage capacity of 7,500 AF. Water is transported to the south coast through the Doulton Tunnel. Currently, it has a surface area of 138 acres when full and stores 5,291 acre-feet. . The unincorporated community of Montecito receives 45 percent of its water supply from Jameson Lake, Fox and Alder creeks via the Doulton Tunnel, so loss of storage capacity is an issue of concern.

The CCWA was formed in 1991 to finance, construct, manage, and operate Santa Barbara's State Water Project facilities. Construction of the facilities to import State Water Project water to the County began in 1994, including a 42-mile extension of the State Water Project water pipeline, pumping plants, and a regional treatment plant to treat the water for both San Luis Obispo and Santa Barbara counties. The Coastal Branch portion of the State Water Project brings water 117 miles from the California Aqueduct in Kern County, through San Luis Obispo County and the Santa Maria Valley, continuing to the northerly portion of Vandenberg Air Force Base. At VAFB, the Coastal Branch connects to the 42-mile pipeline comprising the Mission Hills and the Santa Ynez Extensions. The Santa Ynez section ends at Lake Cachuma. Water is then delivered through existing facilities to the south coast of Santa Barbara County. The Authority also constructed and operates the Polonio Pass Water Treatment Plant, located in northern San Luis Obispo County and described below. In addition, under a joint powers agreement with DWR, CCWA operates all of the Coastal Branch facilities downstream of the treatment plant.

5 **Page 27 – Water Uses, Agricultural Water**

Please note that the "Major centers of agriculture", reference should NOT include Santa Barbara. The areas of the County for major agriculture include the citrus and avocado

orchards in addition to and greenhouses in Carpinteria, various types of cultivation and greenhouse crops in Goleta, flower and vineyard cultivation in Lompoc, vineyard cultivation in the Santa Ynez Valley, various row crops and vineyards in Santa Maria and various row crops in Guadalupe.

The predominant land use in the County of Santa Barbara is agriculture, which is also the primary water user. Agricultural water is chiefly supplied by groundwater via private well as throughout the region.

6 **Page 55 – Area Challenges, Santa Barbara**

Please note that in the 3rd Bullet Point, the words, "Santa Barbara" should be inserted before "The City" in that there are numerous cities within the County; the City of Santa Barbara is only one of those cities.

7 **Page 66 – Regional Resource Management Strategies, Santa Barbara**

- Agricultural Water Quality: Increasing water use efficiency and achieving reductions in the amount of water used for agricultural irrigation. Includes incentives, public education, and other efficiency-enhancing programs. In Santa Barbara County, most agricultural water supplies are obtained from private groundwater wells. Some farmers on the South Coast buy some or all of their water from a water purveyor. Agricultural water use efficiency is practiced both by private agricultural businesses and by local water agencies. Water costs represent a significant portion of the overall operating costs for many growers within the Region, and economic factors have led to significant improvements in agricultural water use efficiency within the Region during the past 30 years.

- Urban Water Use Efficiency: Increasing water use efficiency by achieving reductions in the amount of water used for municipal, commercial, industrial, irrigation, and aesthetic purposes. Includes incentives, public education, and other efficiency-enhancing programs. It has been practiced in the County for over two decades and has been effective in reducing per capita water use. The County Water Agency implements a Water Efficiency Program to implement demand reduction on a regional basis. The County urges responsible design of landscapes and appropriate choices of appliances, irrigation equipment and the other water-using devices that enhance the wise use of water. In recent years, laws have been passed that require efficient plumbing devices, appliances, and landscape designs. Most agencies in the Region provide rebates to customers as an incentive to conserve.

- Conveyance – Delta: Maintaining, optimizing use of, and increasing the reliability of regional treated and untreated water conveyance facilities. Included within this strategy is maintaining the ability to obtain and convey imported water supplies into the Region. he Region imports Delta water through infrastructure maintained by the Central Coast Water Authority (CCWA). CCWA is a joint power authority comprised of eight member agencies with each agency dedicated to maintaining, optimizing the use of, and

increasing the reliability of water conveyance facilities. Those facilities include 130 miles of pipeline, a water treatment plan, storage facilities, and other systems.

- Conveyance – Regional/Local: Strategies include improvement conveyance systems, upgrading aging distribution systems, promoting development of more extensive interconnections among water resources systems, establishing performance metrics for quantitative and qualitative indicators and assuring adequate resources to maintain the condition and capacity of existing constructed and natural conveyance facilities. Maintain and Enhance Water and Wastewater Infrastructure Efficiency and Reliability – highlighting the important of the RMS. A key regional issue is the lack of redundancy and capacity in storage and distribution systems which leave Region vulnerable to water supply shortages during times of drought and emergencies. The Region has added another regionally-oriented RMS to this RMS which is Increase Back-Up Facilities, Interconnections, Redundant Power Sources, and Treatment Facilities to Secure Water Supplies.

- System Reoperation: Managing surface storage facilities to optimize the availability and quality of stored water supplies and to protect/enhance beneficial uses. Includes balancing supply and delivery forecasts, coordinating and interconnecting reservoir storage, and optimizing depth and timing of withdrawals. Managing the regional infrastructure to optimize the availability and quality of water supplies is essential to maximizing water supplies. It is a regional goal to increase the redundancy and capacity in storage and distribution systems.

- Conjunctive Management and Groundwater Storage: Using and managing groundwater supplies to ensure sustainable groundwater yields while maintaining groundwater-dependent beneficial uses, including coordinating management of ground- water and surface water supplies (conjunctive use). The Region is reliant on groundwater as a source of water supply. It has selected several groundwater management strategies that collectively will increase the supply of groundwater. Those strategies include: Conjunctive Use and Groundwater Management, Efficiency and Conservation Measures, Groundwater Remediation/Aquifer Remediation, Prevention of Contamination and Salt Water Intrusion, and Recharge Area Protection.

- Desalination: Developing potable water supplies through desalination of seawater. Includes disposal of waste brine. The City of Santa Barbara owns a desalination facility that can be brought into operation if needed during severe drought or water shortage conditions; relatively elevated costs for desalination make the desalination plant the last supply option to be used during severe drought.

- Precipitation Enhancement: Increasing precipitation yields through cloud seeding or other precipitation enhancing measures. The County County Water Agency conducts a weather modification program better known as “cloudseeding” to augment rainfall and runoff in watersheds behind the major water reservoirs; Lake Cachuma and Gibraltar Dam on the Santa Ynez River and Twitchell Reservoir near Santa Maria. The operational program has been in existence since 1981 and follows research conducted between

1957 and 1974 that indicated significant increases in rainfall could be achieved by seeding convective bands embedded in winter storms that move through the area.

- Recycled Municipal Water: Developing usable water supplies from treated municipal wastewater. Includes recycled water treatment, distribution, storage, and retrofitting of existing uses. The Region currently produces 4,177 acre-feet per year of recycled water and plans on expanding production to 7,035 acre-feet per year by 2035. Recycled water is produced by Goleta Water District, the City of Santa Barbara, and Laguna County Sanitation District. The use of recycled water also has the added benefit of reducing wastewater discharge into the ocean which is a highly valued outcome in the Region.

- Surface Storage – Regional/Local: Developing additional yield through construction or modification (enlargement) of local or regional surface reservoirs or developing surface storage capabilities in out-of-region. The Region has four major reservoirs that are managed for various uses. The Region seeks to augment regional storage through the removal of sediment. It is a regional goal to increase local storage capacity for the south coast sub-region.

- Drinking Water Treatment and Distribution: Includes improving the quality of the potable supply delivered to potable water customers by increasing the degree of potable water treatment. Strategy also may include conveyance system improvements that improve the quality of supply delivered to treatment facilities. Utilization of New or Additional Technologies for Water and Wastewater Treatment that are Economical and Environmentally Sustainable. The use of new or additional technology is seen as an opportunity to improve treatment in an economical and environmentally sustainable manner. The Region is continuously implementing projects and program to comply with increasingly stringent federal and State drinking water standards and new technology plays a potential role in this

- Groundwater and Aquifer Remediation: Includes strategies that remove pollutants from contaminated groundwater aquifers through pumping and treatment, in situ treatment, or other means. The Region has identified the need to improve groundwater quality through the control and treatment of salts, nutrient, and industrial contaminants. For example, the Santa Maria Valley Groundwater Assessment (Appendix 1-D), conducted as part of the IRWM Plan 2013, examined the transport and fate of salts and nutrients in surface water and groundwater in the valley. Attention is being focused on providing extensions of sewer systems to serve densely populated areas that remain on septic systems and the remediation of groundwater contamination at orphaned sites. Santa Barbara County Water Agency is conducting in-depth groundwater basin studies to determine the location and trends of groundwater quality impairments.

- Matching Water Quality to Use: Optimizing existing resources by matching the quality of water supplies to the required quality associated with use. Several water agencies have adopted regulations requiring the use of recycled water in place of potable supplies for certain non-potable irrigation uses. Additionally, untreated water is being used in the Santa Maria Valley for landscape irrigation.

- Pollution Prevention: Strategies that prevent pollution, including public education, efforts to identify and control pollutant contributing activities, and regulation of pollution-causing activities. Includes identifying, reducing, controlling, and managing pollutant loads from non-point sources. The Region works with the SWRCB and CCRWQCB to comply with the following: water quality planning programs (adoption, review, and amendment of state wide and basin water quality control plans and policies) including development and adoption of Total Maximum Daily Loads (TMDLs) and implementation plans; regulatory programs including the permitting and control of discharges through the NPDES and WDR permits, discharge to land, and stormwater and storage tank programs; monitoring and quality assurance programs; and non-point source management programs (e.g. Watershed Management Initiative).

- Salt and Salinity Management: Recommendations that encourage stakeholders to proactively seek to identify sources, quantify the threat, prioritize necessary mitigation action and work collaboratively with entities with the authority to take appropriate actions. Stakeholders in the Santa Maria Valley proactively conducted the Santa Maria Valley Groundwater Assessment to support the development of a Salt and Nutrient Management Plan pursuant to the SWRCB Policy 2009-0011. Other sub-regions are pursuing compliance with SWRCB water quality management programs.

- Urban Runoff Management: Includes strategies for managing or controlling urban runoff, including intercepting, diverting, controlling, or managing stormwater runoff or dry season runoff. Urban Runoff Management was selected as a RMS by the IRWM Region. Various entities in the Region are focusing their efforts on poor surface water quality in creeks, rivers, and oceans due to polluted storm water and urban runoff discharges. The Region is implementing strategies for managing and controlling urban runoff to comply with SWRCB and CCRWQCB regulatory programs including the "Watershed Management Initiative.

- Agricultural Lands Stewardship: Includes strategies for promoting continued agricultural use of lands (e.g. agricultural preserves), strategies to reduce pollutants from agricultural lands, and strategies to maintain and create wetlands and wildlife habitat within agricultural lands. Stewardship strategies for agricultural lands include wetlands creation, land preserves, erosion reduction measures, invasive species removal, conservation tillage, riparian buffers, and tailwater management. Land preservation represents a key agricultural land stewardship activity implemented within the Region and was selected as an appropriate RMS. The County of Santa Barbara's Agricultural Preserve Program (Agricultural Commissioner's Office) works toward the goal of long term conservation of agricultural and open space lands. The program enrolls land in Williamson Act or Farmland Security Zone contracts whereby the land is enforceably restricted to agricultural, open space, or recreational uses in exchange for reduced property tax assessments. Land stewardship practices that are implemented by private landowners include erosion control, habitat conservation, and pollution-reduction. The Regional Board is also involved in assisting in agricultural land stewardship through

regulation (including issuance of discharge permits or conditional waivers) of animal confinement, agricultural operations, and nursery operations.

- Economic Incentives: Includes economic incentives (e.g. loans, grants, water pricing) to promote resource preservation or enhancement. Several water agencies maintain economic incentives to encourage water conservation, including rebate programs and tiered water rates. The region actively seeks State and federal grants to promote resource conservation.
- Ecosystem Restoration Strategies that restore impacted or impaired ecosystems, and may include invasive species removal, land acquisition, water quality protection, revegetation, wetlands creation and enhancement, and habitat protection and improvement, habitat management and species monitoring. Ongoing efforts within the Region include but are not limited to habitat restoration in flood plains; land conservation; invasive species control; rehabilitation and revegetation; wetlands preservation; debris clearance from south coast creeks; restoration of habitat damaged by wildfires; non-point source pollution control; and addressing flow hydraulics and preserving natural flow hydrology.

This concludes our comments on Volume 2 of the California Water Plan Update – Public Review Draft 2013. We thank you for the opportunity to provide comments.

Sincerely,

Jane Gray

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